

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 446 500 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
14.04.1999 Bulletin 1999/15

(51) Int Cl.⁶: **G06F 17/60**, G06F 7/00,
G07G 1/00

(21) Application number: **90302004.8**

(22) Date of filing: **26.02.1990**

(54) Automated order and payment system

Automatisches Bestellungs- und Bezahlungssystem

Système automatique de commande et de paiement

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

(56) References cited:
EP-A- 0 239 110 US-A- 4 567 359

(43) Date of publication of application:
18.09.1991 Bulletin 1991/38

(73) Proprietor: **VISA INTERNATIONAL SERVICE
ASSOCIATION**
San Francisco California 94128-8999 (US)

- **IBM TECHNICAL DISCLOSURE BULLETIN**, vol. 25, no. 11B, April 1983, pages 5892-5893, Armonk, New York, US; S.N. ZILLES: "Catalog-based order entry system"
- **AFIPS CONFERENCE PROCEEDINGS**, 1978 NATIONAL COMPUTER CONFERENCE, Anaheim, CA, 5th - 8th June 1978, pages 217-221, AFIPS Press, NJ, US; D.G. KOVAR: "The future of special purpose terminals"

(72) Inventor: **GOROG, Jonathan M.**
Herndon, VA 22070 (US)

(74) Representative:
Carpmael, John William Maurice et al
CARPMAELS & RANSFORD
43 Bloomsbury Square
London, WC1A 2RA (GB)

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 0 446 500 B1

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] This invention relates generally to automated order entry systems and more specifically to electronic communication of orders from a buyer to a seller of products/services.

[0002] The originality of the invention lies in the integration of existing devices, products and networks to accomplish a unique service which will make the process of buying and selling significantly more efficient. By using electronic communication technologies, this invention will allow the general public, including the visually and mobility handicapped, to place orders, and to pay for and receive merchandise and services, directly from their domiciles. Additionally, the same process will be used for merchant to merchant ordering and sales transactions.

2. Background

[0003] Several types of electronic data entry systems are described in issued patents. These fall into several classes. Certain data entry systems are caused to record data by an operator pressing a series of keys to allow the operator to enter alpha-numeric data. Other such systems cause data to be entered through use of a manually scanned optical sensor. One such combination unit having both keyboard input and optical scanner input is described in U.S. Patent No. 4,621,189 to Kumar et al. Similarly, U.S. Patent No. 4,578,572 to Hice discloses an apparatus for personal identification which comprises a bar code printer and separate bar code reading apparatus connected to a portable keyboard data input device.

[0004] Other bar code reading devices have also been disclosed in issued U.S. Patents. In U.S. Patent No. 4,621,259 to Schepers et al. an optical bar code reader connected to a station selecting apparatus in a television set allows a user to select one particular station for viewing. In U.S. Patent No. 4,415,065 to Sandstedt, an apparatus is disclosed containing an optical bar code reader attached to a portable micro-processor for rapid entry of orders in a restaurant or a retail vending facility. In U.S. Patent No. 4,516,016 to Kodron, an apparatus is disclosed that is very similar to the Sandstedt invention for use in recording orders in restaurants that contains an optical bar code reader that is connected to a central processing unit for entry of restaurant orders. In U.S. Patent No. 4,608,487 to Awane et al., a bar code reader is used to input information to automated vending machines. In U.S. Patent No. 4,471,218 to Culp, a portable data entry terminal is disclosed containing an optical bar code reader and memory that subsequently transfers the data from the portable unit to a central com-

puter.

[0005] Optical readers known as "light pens" have also been used to interact with cathode ray tubes ("CRT") to communicate with a central data base to indicate the selection of an option by a user. U.S. Patent No. 3,668,312 to Yamamoto et al., discloses a system whereby a party receiving a television image can use a light pen to indicate a selection of an option. This invention is used in the context of a telephone system. In U.S. Patent No. 4,329,684 to Monteath et al., a light sensing apparatus capable of sensing either a bar code or the light output in a particular area of a television screen to allow input of information to a central computer is disclosed. Patent No. 3,292,489 to Johnson et al., discloses a system for retrieving information from a database where data is displayed on a CRT with an associated optical code which is scanned by a hand-held optical sensor, which in turn provides information to a database for retrieval of the data required.

[0006] Portable data storage devices are also disclosed in issued U.S. patents. In U.S. Patent No. 4,525,624 to Pontefract, a data storage device is disclosed that stores information for a salesman, while information is input via a key pad. At the close of each day, the stored data is transmitted via telephone to a central computer. Similarly, in U.S. Patent No. 4,115,870 to Lowell, a hand-held data processing terminal is disclosed that stores data input via a key pad, which device also contains a data transmission circuit to allow information stored to be transmitted over telephone lines to a central computer. In summary, these patents all describe systems, each of which serves only a part of the entire retail cycle of customer demand, supplier filling that demand, payment for goods or services desired and delivery of those goods and services.

[0007] Many of the above patents describe systems which collect data and transfer data to a central database. None of the patents describe data communication back from the central database to the data collection device in the same process. Additionally, none of the patents address the needs of the visually and mobility handicapped segment of the general public who cannot operate the devices described. Finally, none of the above patents describe a means to account for the credit needs of the public which are an integral part of the vast majority of the purchases made by consumers today.

[0008] IBM Technical Disclosure Bulletin, Vol. 25 No. 11B April 1983, p.5892-93, discloses a catalog order registration method in which a wand at an interactive terminal reads a bar code printed on the pages of the catalog. Invariant information, such as stock or part numbers, can be entered error-free, leaving only the variable information, such as customer name, quantity, and delivery, to be keyboard entered. The method uses a bar-code reading wand connected to an information processing system to read the product number from the printed catalog.

[0009] EP-A-0239110 discloses a computer controlled rental and sales system and method for a supermarket and the like which allows a customer to purchase or rent items from a locked cabinet without the intervention of store personnel. The authorized customer first inputs a membership card and a secret number. If these are correct, the system unlocks the locked cabinets, whereby the customer is allowed to examine all of the contents in the unlocked cabinet at his or her leisure. The computer continuously monitors the removal of all items from the unlocked cabinet. The customer reads in identifying information from each of the selected items. The computer prevents the cabinet from being relocked unless the number of items that have been removed equal the number of items that have been read in by the customer. When the number of items equal, the doors of the cabinet are relocked, and the customer is provided with a customer slip indicating the items that have been selected.

[0010] The system and method can be utilized in a sale or rental context. In the rental context, return of rental items can be performed in parallel with rental of items. High security is achieved without employee monitoring since the customer is held responsible for all items removed during the time that the cabinet is unlocked.

[0011] US-A-4,567,359 discloses a system for automatically dispensing information, goods and services to a customer on a self-service basis including a central data processing center in which information on services offered by various institutions in a particular industry is stored. One or more self-service information and sales terminals are remotely linked to the central data processing center and are programmed to gather information from prospective customers on goods and services desired, to transmit to customers information on the desired goods or services from the central data processing center, to take orders for goods or services from customers and transmit them for processing to the central data processing center, to accept payment, and to deliver goods or services in the form of documents to the customer when orders are completed. The central data processing center is also remotely linked to terminals of the various institutions serviced by the system, so that each institution can be kept up-dated on completed sales of services offered by that institution.

[0012] The AFIPS Conference Proceedings 1978, June 5-8, 1978, pages 217-221 generally describes the future of special purpose terminals which are defined as computer input/output devices which are used by people and which have physical and/or functional characteristics that are specialized for a particular application or environment. The areas of use in the field of Special Purpose Terminals includes Point-of-sale applications for retail department and specialty stores, drug and discount stores, supermarkets and service stations.

SUMMARY OF THE INVENTION

[0013] Features of the invention are defined in the accompanying claims.

[0014] The Automated Order and Payment System of this invention allows consumer transactions for goods and services to take place in a faster and more efficient manner than currently available thereby reducing the cost of selling such goods to consumers. The invention provides a simplified ordering system that eliminates the need for any order form to be filled out by the consumer. It further does not require the consumer to go to the place of sale in order to obtain the merchandise desired.

[0015] The system comprises three major components:

(a) A central computer system ("CCS") with a variety of programs, processing and storage capability and communications capabilities to allow input and output communications with order computer terminals.

(b) A product/service identification system consisting of symbols that are presented to the public via print and/or television media.

(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and

communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

[0016] The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols.

[0017] The CCS has various computer software programs that allow product/service order information to be accepted and transmitted from the central computer. Such software will also confirm or deny orders for products based upon records of inventories that have been provided by participating businesses or by sending a query to other computers holding the necessary data records for participating businesses. The CCS also confirms/denies the payment medium chosen by the consumer by communicating with third party systems such as credit card authorization systems or individual businesses.

[0018] Upon completion of order acceptance and confirmation of payment media, the confirmed order with associated information is sent to the consumer via the communications output means of the CCS. The confirmation information is received by the OCT via its internal communication means and displayed or printed for the consumer. If the order or payment is denied, the CCS

sends a denial message to the OCT from the CCS communication means, which message is received by the OCT communication means. Thus the OCT and the CCS communicate with each other via their two-way communications capability.

[0019] The invention operates through a series of identification codes that uniquely identify the company offering the product/ service for sale and the individual product/service desired. Such identification codes may consist of, but are not limited to, bar codes which represent businesses and products/services being offered. These codes are printed in catalogs, magazines, newspapers and television advertisements, direct mail circulars, and any other medium that might communicate product information to consumers.

[0020] The OCT comprises data entry and storage and communication capabilities for use by the consumer. The consumer enters identifications data about the company from which he wishes to purchase products/ services and data concerning the products/services to be purchased. This information is entered via an optical identification code reader which is manually scanned over an identification code. Information can also be entered manually via a key pad or orally via a voice recognition capability embodied in the OCT, which capability converts the human voice into digital data. The associated key pad or voice recognition capability also is used to input other information relating to the sale. The OCT also has the capability to read magnetic stripes, microchips, and optical storage media that are incorporated in credit cards using a plurality of means embodied in the OCT.

[0021] The OCT has a capacity to store orders from multiple companies and multiple orders from any given company.

[0022] A consumer uses the communications capacity of the OCT to transmit the order data via telephone lines, radio signal, or other communications links to the CCS. The OCT also has variable programming means such that it will prompt the user to enter data as required.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The automated order and payment system allows a consumer to place orders for goods and services through use of a order computer terminal ("OCT") that interacts with identification codes and voice commands that specifically identify companies and products/services, which codes appear in advertising media. The system allows rapid entry of orders for products and services without the consumer having to go to the location where such products and services are offered and with a minimum of consumer data entry. The invention consists of widely distributed OCTs and a central computer system ("CCS") that processes the orders and associated credit information that is sent to the CCS from the OCTs.

[0024] Through use of the OCTs, consumers rapidly enter information concerning the products and services desired with such information subsequently transmitted to the CCS for rapid processing and verification.

[0025] Referring first to Fig. 1, the OCT consists of an optical reader **[1]** that a consumer scans across identification codes **[12]** that may appear in magazine, newspaper, catalog, and televisions advertisements. These codes identify the company providing the product/service, the product/service desired and the price code for the product/service. Information sensed by the optical reader is placed in the OCT memory **[7]**.

[0026] The OCT contains an alpha numerical key pad **[2]** by which a consumer can enter data when necessary and which contains a key for initiating the order process and a key for verifying an order once all data processing concerning that order has been completed.

[0027] For special applications where a visually or mobility handicapped person used the system, the OCT contains a human voice recognition means and may also contain a speech synthesizing means. The voice recognition means translates voice commands into digital data that is processed and stored in memory. The voice synthesizing means is used in lieu of the visual display thereby prompting the user through the ordering and payment sequence.

[0028] The OCT also contains a magnetic reading capability **[3]** that allows a consumer to use the magnetic stripe on a credit card to directly input the information contained therein to the order entry system. In this manner, data can be rapidly entered concerning the credit information of a consumer.

[0029] The OCT also contains a laser optical reader **[4]** that optically reads stored data that may be present on a credit card. Such optical data may also contain consumer, and other identifying data.

[0030] The OCT also contains means to read the data stored in microchips embedded in credit cards **[5]**. Data stored in microchips will also contain certain consumer identification and credit card information necessary to complete purchase transactions.

[0031] The OCT also contains means to recognize the speech of an individual in order to enter data orally **[6]** for those handicapped persons unable to manually use a credit card.

[0032] The OCT also contains a communications means **[8]**. This interface allows the OCT to communicate with the CCS via telephone or other communications media (i.e. optical fiber networks, radio frequency transmissions, and satellite communications means). In this way, the OCT can rapidly send information without error to the CCS concerning the order information and information concerning the consumer's credit.

[0033] The OCT also has an alphanumeric display **[9]** that informs the consumer that the OCT is operating correctly, that the order has been accepted or rejected, and other information related to communication between the OCT and the CCS. Such information may also be print-

ed via an integral printer means [10] or communicated to a handicapped individual via an integral speech synthesizing means [11].

[0034] Finally, the OCT contains both a memory capability and a capability to execute preprogrammed software [7]. This capability allows the OCT to store the software necessary to allow the OCT to interact with the consumer and the CCS. Further, the memory capability allows the OCT to store information presented to it by the optical reader, the key pad, the voice recognition system, the microchip reader, or the magnetic stripe reader which information relates to consumer identification data and to the goods or services desired for subsequent transmission via the communications interface to the CCS. Throughout this application, the credit and order data is referred to as the "order packet."

[0035] Referring to Fig. 2, The consumer uses the optical reading means of the OCT to read the optical identification codes [20] that are present in media advertising. The consumer first scans the identification code relating to the merchant or service provider. The consumer next scans the identification codes relating to the goods or services that the consumer desires to purchase.

[0036] In the case of a handicapped individual who cannot use the optical scanning means, the advertising data is input using the voice recognition means [6]. (Note: Throughout this specification, optical identification codes are exemplified as the input data. Data input capabilities of this inventions are in no sense so limited but should be viewed broadly. Indeed, it is a key aspect of this invention to provide alternative means of advertising and credit data input for those handicapped persons unable to handle a credit card or an optical identification code reader.)

[0037] In the situation where a handicapped consumer is ordering, that person will activate the OCT by a voice command and enter company data and product/service data orally. Company and product/service data will be presented to the handicapped public via media that has been customized to meet the specialized needs involved.

[0038] Software in the OCT interprets the optical identification code or orally input information [21] thereby obtaining company identification data, product or service identification data, and prices for the goods or services desired. After interpretation of this data, the information is stored [22] in the OCT memory and is either displayed [23] or confirmed by the voice synthesizer for the consumer.

[0039] After company, product and price data is entered, the OCT prompts the consumer to enter a credit card [24] to be used for the transaction. If handling a credit card is not possible for the handicapped person, credit data can be pre-stored in the OCT memory at the time the unit is provided to the handicapped person, thereby allowing such data to be transmitted without physically handling a credit card. The credit card data is accepted [25] and information is acquired concerning

the consumer's name, address, credit card number, type of credit card, and preferred delivery day, time and address for delivery. This information may be extracted from any of the various types of credit cards having integral data storage capability (i.e. chip card, laser optical card, magnetic card).

[0040] Data extracted and interpreted from the consumer's credit card is stored in the OCT memory [26] and displayed for the consumer [27] on the OCT alphanumeric display or printed as desired [28] or verified orally via the speech synthesizing means [29].

[0041] After all data is stored, the consumer activates the OCT communications means [8, 29A] that allows the OCT to communicate with the CCS concerning the proposed sale of goods or services. The OCT memory now contains credit authorization information, total purchase price, company identification, a list of the products/services desired, the consumer's name and address, the delivery address, and the date and time for delivery.

[0042] Referring to Fig. 3, the CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS.

[0043] In a similar fashion, the credit data [33] is separated from the incoming order packet information. This credit data contains the credit authorization data and other information relevant to the credit card in use, and the total price of the goods or services desired. This information is then subjected to the credit data process [34] of the CCS.

[0044] Referring next to Fig. 4, the CCS takes the order data information and determines if the order data may be further processed by using a local database internal to the CCS, or if the CCS must send such data to external merchant/supplier databases [40]. If the order information is not kept locally in the CCS, the CCS will activate the order communications module [41] which will in turn communicate with the external merchant/supplier database [42]. Once the external database has determined that the goods or services are available, it communicates with the CCS order communications module notifying the CCS that the order has been accepted or not [44]. Such information is subsequently provided to the order acceptance process of the CCS (Fig. 6).

[0045] If the order data processing of the CCS determines that the product or service is represented in the CCS internal database of products and services [43], the CCS determines if the product of service is available

in the desired quantity and/or at the desired time. The CCS verifies that inventory is present at the merchant/supplier, verifies the price of the goods or services desired, calculates the applicable tax, and confirms the delivery date and time desired. If the order information can be so fulfilled according to the database, the order accepted. If the database indicates the order cannot be satisfied it is rejected [44] and such information (acceptance or rejection) is communicated to the order acceptance process of the CCS (Fig. 6).

[0046] Referring to Fig. 5, credit data that is separated during the order packet process is sent to the credit processing software of the CCS. The credit data [33] containing the information on the consumer, the type of credit card in use, the credit limits of the card (collectively the authorization data [50]), and the total purchase price [51] are divided into the data format necessary to communicate with the external credit database in question. The CCS credit communication module [52] allows this interaction with the external credit authorization network [53] to take place.

[0047] Once the external credit authorization network has reviewed the authorization and total price data, it communicates its determination back to the CCS via the credit communications module [52]. The CCS credit data processing software takes the incoming credit data and determines if the credit for the individual in question has been approved [54]. The results of this credit approval process are communicated to the CCS order acceptance process (Fig. 6).

[0048] Referring next to Fig. 6, the CCS order acceptance process makes two determinations. First, the CCS determines if products/services are available [60]. If not, the order is rejected [62] and the CCS so communicates to the OCT via the OCT communications module [30].

[0049] If the product or service is available, the CCS determines if credit for the purchase has been approved. If credit has not been approved, the order is rejected [62] and the rejection is communicated to the OCT via the OCT communications module [30]. If credit has been approved, the CCS proceeds to the order acceptance sequence [63] and communicates the order acceptance and confirming information to the OCT via the OCT communications module [30].

[0050] Because the CCS contains internal databases of products and services, it also performs an inventory management service to those merchants who subscribe to the automated order and payment system. Thus an added capability of the invention is to provide merchants with inventory reports concerning their goods shipped and on hand as well as other inventory control features.

[0051] In summary, this process selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer as well as the delivery date and method of delivery.

How To Use

[0052] When a consumer wants to place an order for products/ services the consumer activates the OCT by pressing a function key on the OCT key pad. The consumer is then prompted through a series of steps that are displayed on the OCT display screen. These steps lead the consumer through the process required in order to complete an order. Referring to Fig. 7, these steps include but are not limited to the following:

1. Press the function key to activate the OCT [70].
2. The consumer is prompted to scan the optical reader over the company identification code printed or transmitted in the advertisement [71].
3. The consumer is next prompted to scan the optical reader over the product(s) identification code (s) listed in the advertisement and which the consumer desires to order [72].
4. The consumer is prompted to enter the form of payment using the payment input means of the terminal. For example the user is directed to pass a credit card through the magnetic stripe reader of the terminal [73].

It is important to note that step 4 is accomplished by the OCT reading such information from the credit card in use. Such information will be present in the magnetic stripe, optical storage media or microchip on the credit card in use. It is an objective of this invention to provide a means of reading all such credit cards.

5. The consumer is next prompted to enter data concerning the address to which the consumer wishes the goods to be shipped if different from that stored on the credit card in use. This information is entered via the alphanumeric key pad of the OCT [74].

6. When this order entry process is completed, the consumer activates the communication capability of the OCT by causing the OCT to be connected to a telephone system or other transmission medium and depressing a "send" key [75]. At this point the OCT will dial a preprogrammed telephone number and transmit the order to the CCS. The information containing the order or orders, payment method, shipping addresses, and preferred method of delivery for each order (the order packet) is then processed by the CCS.

7. The CCS, via its internal software, accepts the order packet data [76], divides the data into order data [77] and credit data [78] performs the necessary analysis and communications to accept or reject the order [79], communicates the results to the OCT in question [80].

8. Once the order acceptance is communicated to the OCT, the consumer has a final opportunity to place the order or reject it [81] by so notifying the CCS via the OCT keypad input.

9. If the order is accepted by the consumer, it is placed by the CCS [82].

10. Once the order is placed, it is subsequently delivered to the consumer, or is filled for consumer pick-up on the date and at the time desired.

5

How to Use when Visually and/or Mobility-Handicapped

[0053] When a handicapped consumer wants to place an order for products/services, the consumer performs the following actions:

10

1. Activate the OCT by speaking an appropriate command into the OCT microphone [70].

15

2. The consumer is prompted by the OCT voice synthesizer to orally enter the company name that has been obtained from the advertising source that has been modified for use by the handicapped [71]. (e.g., Braille imprinting).

20

3. The consumer is prompted by the OCT voice synthesizer to orally enter the products/services and the price of those products and services desired [72].

25

4. The consumer is prompted by the OCT voice synthesizer to orally enter the form of payment using the payment input means of the OCT. For example, the user is prompted to pass a credit card through the magnetic stripe reader of the OCT [73]. If the consumer is unable to perform this task because of a particular handicap, the consumer will use the voice input means of the OCT to describe the payment method. Any special payments arrangements can be programmed into the OCT memory during the installation process.

30

35

[0054] The remaining operations of the product ordering and approval process proceed in the same fashion as previously described. Input and output during the ordering process can be achieved with any of the above described input or output sources (i.e. printer, voice synthesizer, alphanumeric display).

40

45

Claims

1. An automated order and payment system of a type suitable for home use, which comprises:

50

a plurality of remote programmable data input-output terminals and a central data processor, each one of said plurality of remote terminals comprising:

55

an optical reader (1) for optically scanning and producing first data representative of visually

displayed product or service identification code information (12);

a payment card reader (3,4,5) for inputting payment card information stored in any one of a plurality of user's different payment cards, including means for producing second data representative of such payment card information;

integral memory means (7) for temporarily storing the first data representative of the optically scanned identification code information (12) and the second data representative of the payment card information, said first and second data being temporarily stored in said memory (7) until a user chooses to initiate a purchase transaction (29A); and

integral communication means (8) for transmitting the first and second data to said central data processor, subsequent to storage of the first and second data in the integral memory means after said user chooses to initiate said purchase transaction (29A); and

additional integral memory means (7) for storing computer programs for controlling operation of at least the optical reader, the payment card reader, the integral memory means and the integral communication means;

said central data processor comprising:

first central communication means (30) for receiving the transmission of the first and second data from the integral communication means (8) of the remote terminals;

order confirmation means (31,32) for providing to the respective remote terminal, subsequent to receipt of a payment authorisation from an external database (53), a request for the user's confirmation that an order for a product or service represented by the first data should be completed; and

wherein the payment card reader (3,4,5) of at least one of said remote terminals comprises a microchip reader (5) for reading information from microchips embedded in payment cards.

2. The automated order and payment system according to Claim 1 wherein the payment card reader of at least one of said remote terminals comprises a magnetic reader (3) for reading information from magnetic stripes on payment card.

3. The automated order and payment system accord-

ing to Claim 1 wherein the payment card reader of at least one of said remote terminals comprises a laser optical data reader (4) for reading information that is optically stored on payment cards.

4. The automated order and payment system according to Claim 1 wherein the payment card reader of at least one of said remote terminals comprises speech processing means (6) for causing oral instructions to be stored and used as at least one of the first and second data.

5
10
5. The automated order and payment system according to Claim 1 wherein the first central communication means communicates with multiple remote programmable data input/output terminals over a plurality of transmission media.

15
6. The automated order and payment system according to Claim 1 wherein the central data processor further includes a database (43) of information concerning availability of products and services for merchant/suppliers of said products and services.

20
7. The automated order and payment system according to Claim 6 wherein the central data processor further includes means for providing a message to a remote terminal indicating rejection of an order, or part of an order, based upon availability/non-availability of the products or services corresponding to the first data.

25
30
8. A process for an automated order and payment system of a type suitable for home use in which a plurality of remote programmable data input-output terminals and a central data processor are used to input data, each of said data input-output terminals including a first integral memory (7); an integral communication device (8); an optical reader (1); a payment card reader (3,4,5); and a second integral memory (7) storing computer programs for controlling operation of at least the optical reader, the payment card reader, the first integral memory and the integral communications device; the process comprising:

35
40
45

optically scanning and producing first data representative of visually displayed product or service identification code information (12);
 inputting payment card information stored in any one of a plurality of user's different payment cards, and producing second data representative of such payment card information;
 temporarily storing, in said first integral memory, the first data representative of the optically scanned identification code information (12) and the second data representative of the payment card information said first and second data

50
55

ta being temporarily stored in said first integral memory until a user chooses to initiate a purchase transaction (29A); and transmitting, using said integral communication device, the first and second data to said central data processor, subsequent to storage of the first and second data in said first integral memory after said user chooses to initiate said purchase transaction (29A); and receiving, in a first central communication device (30) of said central data processor, said first and second data from the integral communication means of the remote terminals; receiving payment authorization from an external database (53) ; and sending a request to the respective remote terminal requesting order confirmation from the user that an order for a product or service represented by the first data should be completed; wherein the payment card reader of at least one of said remote terminals comprises a microchip reader for reading information from microchips embedded in payment cards.

Patentansprüche

1. Automatisiertes Auftrags- und Zahlssystem, das für den Heimgebrauch geeignet ist, mit

einer Vielzahl von entfernten programmierbaren Dateneingangs-/Datenausgangsstationen und einem zentralen Datenprozessor, wobei jeder der Vielzahl von entfernten Stationen umfaßt:

einen optischen Leser (1) zum optischen Abtasten und Erzeugen erster Daten, die eine visuell dargestellte Produkt- oder Dienstleistungs-Identifikationscode-Information (12) repräsentieren;

einen Zahlkartenleser (3, 4, 5) zur Eingabe von einer Zahlkarteninformation, die auf einer beliebigen einer Vielzahl von unterschiedlichen Zahlkarten des Benutzers gespeichert ist, wobei der Zahlkartenleser Mittel zum Erzeugen zweiter Daten umfaßt, die eine solche Zahlkarteninformation darstellen;

ein integriertes Speichermittel (7) zum vorübergehenden Speichern der ersten Daten, die die optisch abgetastete Identifikationscodeinformation (12) darstellen, und der zweiten Daten, die die Zahlkarteninformation darstellen, wobei die ersten und die zweiten Daten vorübergehend in dem Speicher (1) gespeichert werden bis ein Benutzer die Einleitung einer Kauftrans-

aktion (29A) auswählt; und

ein integriertes Kommunikationsmittel (8) zur Übertragung der ersten und der zweiten Daten zu dem zentralen Datenprozessor nach dem Speichern der ersten und der zweiten Daten in dem integrierten Speichermittel nachdem der Benutzer die Einleitung der Kauftransaktion (29A) ausgewählt hat; und

zusätzlichen integrierten Speichermitteln (7) zum Speichern von Computerprogrammen zur Steuerung des Betriebs von zumindest dem optischen Leser, dem Zahlkartenleser, dem integrierten Speichermittel und dem integrierten Kommunikationsmittel;

wobei der zentrale Datenprozessor umfaßt:

- ein erstes zentrales Kommunikationsmittel (3) zum Empfang der Übertragung der ersten und der zweiten Daten von dem integrierten Kommunikationsmittel (8) der entfernten Stationen;
- ein Auftragsbestätigungsmittel (31, 32), um der jeweiligen entfernten Station nach dem Empfang einer Zahlungsauthorisation von einer externen Datenbasis (53) eine Anforderung der Bestätigung des Benutzers zu liefern, daß ein Auftrag für ein Produkt oder eine Dienstleistung, die durch die ersten Daten dargestellt werden, abgeschlossen werden soll; und wobei der Zahlkartenleser (3, 4, 5) von zumindest einer der entfernten Stationen einen Mikrochipleser (5) zum Lesen von Information von in Zahlkarten enthaltenen Mikrochips umfaßt.

2. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 1, wobei der Zahlkartenleser von zumindest einer der entfernten Stationen einen Magnetleser (3) zum Lesen von Information von den Magnetstreifen auf der Zahlkarte umfaßt.
3. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 1, wobei der Zahlkartenleser von zumindest einer der entfernten Stationen einen optischen Laser-Datenleser (4) zum Lesen von Information, die auf den Zahlkarten optisch gespeichert ist, umfaßt.
4. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 1, wobei der Zahlkartenleser von zumindest einer der entfernten Stationen Sprachverarbeitungsmittel (6) umfaßt, um Sprachbefehle zu speichern und zumindest als erste oder als zweite Da-

ten zu verwenden.

5. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 1, wobei das erste zentrale Kommunikationsmittel mit mehreren entfernten programmierbaren Dateneingangs-/Datenausgangstationen über eine Vielzahl von Übertragungsmedien kommuniziert.

6. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 1, wobei der zentrale Datenprozessor des weiteren eine Datenbasis (43) von Informationen umfaßt, die die Verfügbarkeit von Produkten und Dienstleistungen der Händler/Lieferanten der Produkte und Dienstleistungen betreffen.

7. Automatisiertes Auftrags- und Zahlssystem nach Anspruch 6, wobei der zentrale Datenprozessor des weiteren Mittel zum Liefern einer Nachricht an eine entfernte Station umfaßt, die die Ablehnung eines Auftrags oder eines Teils eines Auftrags basierend auf der Verfügbarkeit/Nicht-Verfügbarkeit der Produkte oder Dienstleistungen entsprechend der ersten Daten anzeigt.

8. Verfahren für ein automatisiertes Auftrags- und Zahlssystem eines für den Hausgebrauch geeigneten Typs, in dem eine Vielzahl von entfernten programmierbaren Dateneingangs-/Datenausgangstationen und ein zentraler Datenprozessor zur Eingabe von Daten verwendet werden, wobei jede der Dateneingabe-/Datenausgabestationen einen ersten integrierten Speicher (7); eine integrierte Kommunikationseinrichtung (8); einen optischen Leser (1); einen Zahlkartenleser (3, 4, 5) und einen zweiten integrierten Speicher (7) umfaßt, wobei der zweite Speicher Computerprogramme zur Steuerung des Betriebs zumindest des optischen Lesers, des Zahlkartenlesers, des ersten integrierten Speichers und der integrierten Kommunikationsvorrichtung speichert; wobei das Verfahren umfaßt:

- Optisches Abtasten und Erzeugen von ersten Daten, die visuell dargestellte Produkt- oder Dienstleistungsidentifikationscodeinformation (12) darstellen;
- Eingabe einer Zahlkarteninformation, die auf einer beliebigen einer Vielzahl von unterschiedlichen Zahlkarten des Benutzers abgespeichert ist; und Erzeugen von zweiten Daten, die eine solche Zahlkarteninformation darstellen;
- vorübergehendes Speichern in dem ersten integrierten Speicher der ersten Daten, die die optisch abgetastete Identifikationscodeinformation (12) darstellen, und der zweiten Daten,

die die Zahlkarteninformation darstellen, wobei die ersten und die zweiten Daten vorübergehend in dem ersten integrierten Speicher gespeichert werden, bis ein Benutzer die Einleitung einer Kauftransaktion (29A) auswählt; und

- Übertragen der ersten und der zweiten Daten unter Verwendung der integrierten Kommunikationseinrichtung zu dem zentralen Datenprozessor im Anschluß an die Speicherung der ersten und der zweiten Daten in dem ersten integrierten Speicher, nachdem der Benutzer die Einleitung der Kauftransaktion (29A) ausgewählt hat; und

- Empfangen der ersten und der zweiten Daten von dem integrierten Kommunikationsmittel der entfernten Stationen in einer ersten zentralen Kommunikationseinrichtung (30) des zentralen Datenprozessors;

- Empfangen einer Zahlungsautorisation von einer externen Basis (53); und

- Senden einer Anforderung an die jeweilige entfernte Station, um eine Auftragsbestätigung von dem Benutzer anzufordern, das ein Auftrag für ein Produkt oder eine Dienstleistung, die durch die ersten Daten dargestellt werden, abgeschlossen werden soll;

wobei der Zahlkartenleser von zumindest einer der entfernten Stationen einen Mikrochipsleser zum Lesen von Informationen von in Zahlkarten enthaltenen Mikrochips umfaßt.

Revendications

1. Système de commande et de paiement automatisé du type convenant à une utilisation à domicile, qui comprend :

une pluralité de terminaux d'entrée-sortie de données programmables à distance et un processeur de données central, chaque terminal de ladite pluralité de terminaux à distance comprenant :

un lecteur optique (1) destiné à balayer optiquement et à produire des premières données représentatives d'informations de code d'identification de produit ou de service (12) présentées visuellement,

un lecteur de carte de paiement (3, 4, 5) destiné à recevoir en entrée des informations de carte de paiement mémorisées dans l'une quelconque d'une pluralité de cartes de paiement différentes de l'utilisateur, comprenant un moyen

destiné à produire des secondes données représentatives de telles informations de cartes de paiement,

un moyen de mémoire intégré (7) destiné à mémoriser temporairement les premières données représentatives des informations de code d'identification (12) balayées optiquement et les secondes données représentatives des informations de cartes de paiement, lesdites premières et secondes données étant mémorisées temporairement dans ladite mémoire (7) jusqu'à ce qu'un utilisateur choisisse de lancer une transaction d'achat (29A), et

un moyen de communication intégré (8) destiné à transmettre les premières et secondes données audit processeur de données central, après la mémorisation des premières et secondes données dans le moyen de mémoire intégré après que ledit utilisateur ait choisi de lancer ladite transaction d'achat (29A), et un moyen de mémoire intégré supplémentaire (7) destiné à mémoriser des programmes informatiques afin de commander le fonctionnement d'au moins le lecteur optique, le lecteur de carte de paiement, le moyen de mémoire intégré et le moyen de communication intégré,

ledit processeur de données central comprenant :

un premier moyen de communication central (30) destiné à recevoir la transmission des premières et secondes données depuis le moyen de communication intégré (8) des terminaux à distance,

un moyen de confirmation de commande (31, 32) destiné à fournir au terminal à distance respectif, après la réception d'une autorisation de paiement provenant d'une base de données externe (53), une demande de confirmation de l'utilisateur de ce qu'une commande d'un produit ou d'un service représentés par les premières données soit honorée, et

dans lequel le lecteur de carte de paiement (3, 4, 5) d'au moins l'un desdits terminaux à distance comprend un lecteur de micro-puce (5) destiné à lire des informations à partir des micro-puces incorporées dans les cartes de paiement.

2. Système de commande et de paiement automatisé selon la revendication 1, dans lequel le lecteur de carte de paiement d'au moins l'un desdits terminaux à distance comprend un lecteur magnétique (3) destiné à lire des informations à partir des pistes magnétiques sur la carte de paiement.

3. Système de commande et de paiement automatisé

selon la revendication 1, dans lequel le lecteur de carte de paiement d'au moins l'un desdits terminaux à distance comprend un lecteur de données optique à laser (4) destiné à lire des informations qui sont mémorisées optiquement sur les cartes de paiement.

4. Système de commande et de paiement automatisé selon la revendication 1, dans lequel le lecteur de carte de paiement d'au moins l'un desdits terminaux à distance comprend un moyen de traitement de la parole (6) destiné à amener des instructions orales à être mémorisées et utilisées comme au moins les unes des premières et secondes données. 5
5. Système de commande et de paiement automatisé selon la revendication 1, dans lequel le premier moyen de communication central communique avec de multiples terminaux d'entrée/sortie de données programmables à distance sur une pluralité de supports de transmission. 10
6. Système de commande et de paiement automatisé selon la revendication 1, dans lequel le processeur de données central comprend en outre une base de données (43) d'informations concernant la disponibilité des produits et des services pour des négociants/fournisseurs desdits produits et services. 15
7. Système de commande et de paiement automatisé selon la revendication 6, dans lequel le processeur de données central comprend en outre un moyen destiné à fournir un message à un terminal à distance indiquant le rejet d'une commande, ou d'une partie d'une commande, sur la base de la disponibilité/indisponibilité des produits ou des services correspondant aux premières données. 20
8. Procédé destiné à un système de commande et de paiement automatisé d'un type convenant à une utilisation à domicile, dans lequel une pluralité de terminaux d'entrée-sortie de données programmables à distance et un processeur de données central sont utilisés pour recevoir des données en entrée, chacun desdits terminaux d'entrée-sortie de données comprenant une première mémoire intégrée (7), un dispositif de communication intégré (8), un lecteur optique (1), un lecteur de carte de paiement (3, 4, 5), et une seconde mémoire intégrée (7) mémorisant des programmes informatiques destinés à commander le fonctionnement d'au moins le lecteur optique, le lecteur de carte de paiement, la première mémoire intégrée et le dispositif de communications intégré, le procédé comprenant : 25

le balayage optique et la production de premières données représentatives d'informations de code d'identification de produit ou de service

(12) présentées visuellement, la saisie d'informations de carte de paiement mémorisées dans l'une quelconque d'une pluralité de cartes de paiement différentes de l'utilisateur, et la production de secondes données représentatives de telles informations de cartes de paiement,

la mémorisation temporaire, dans ladite première mémoire intégrée, des premières données représentatives des informations de code d'identification balayées optiquement (12) et des secondes données représentatives des informations de carte de paiement, lesdites premières et secondes données étant mémorisées temporairement dans ladite première mémoire intégrée jusqu'à ce qu'un utilisateur choisisse de lancer une transaction d'achat (29A), et

la transmission, en utilisant ledit dispositif de communication intégré, des premières et secondes données vers ledit processeur de données central, après la mémorisation des premières et secondes données dans ladite première mémoire intégrée après que ledit utilisateur ait choisi de lancer ladite transaction d'achat (29A), et

la réception, dans un premier dispositif de communication central (30) dudit processeur de données central, desdites premières et secondes données provenant du moyen de communication intégré des terminaux à distance, la réception d'une autorisation de paiement provenant d'une base de données externe (53), et

l'envoi d'une demande vers le terminal à distance respectif, demandant à l'utilisateur une confirmation de commande indiquant qu'une commande d'un produit ou d'un service représentés par les premières données doit être honorée,

dans lequel le lecteur de carte de paiement d'au moins l'un desdits terminaux à distance comprend un lecteur de micro-puces destiné à lire des informations à partir des micro-puces incorporées dans des cartes de paiement.

ORDER COMPUTER TERMINAL 'OCT'

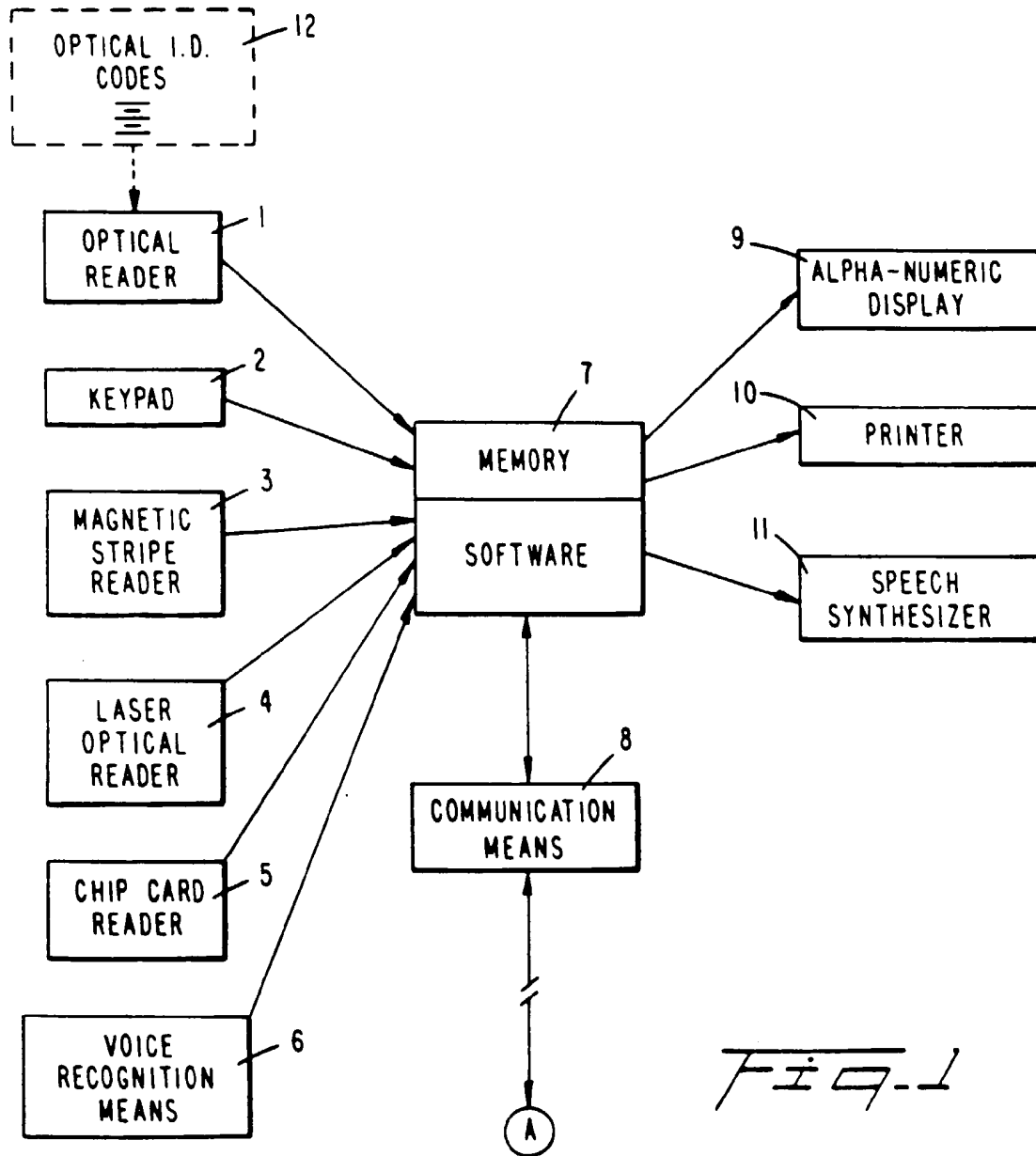
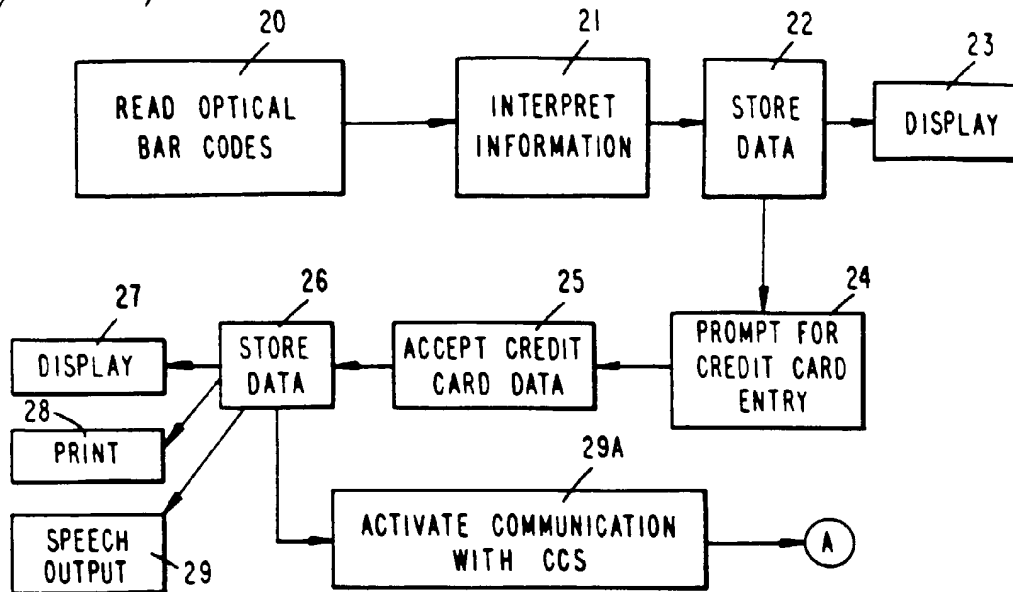


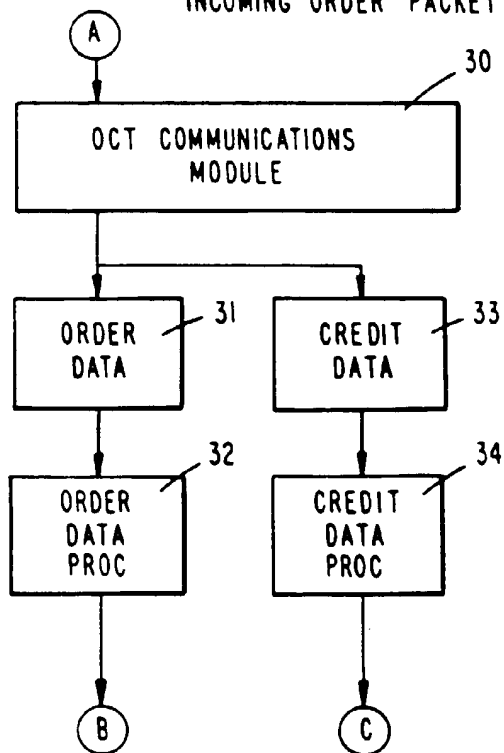
Fig. 1

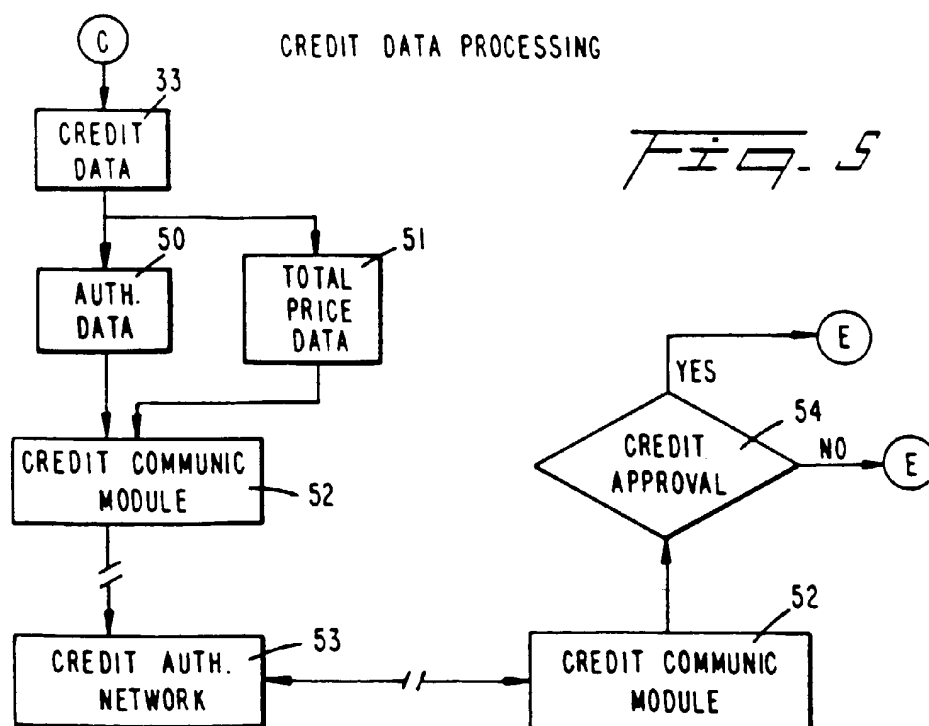
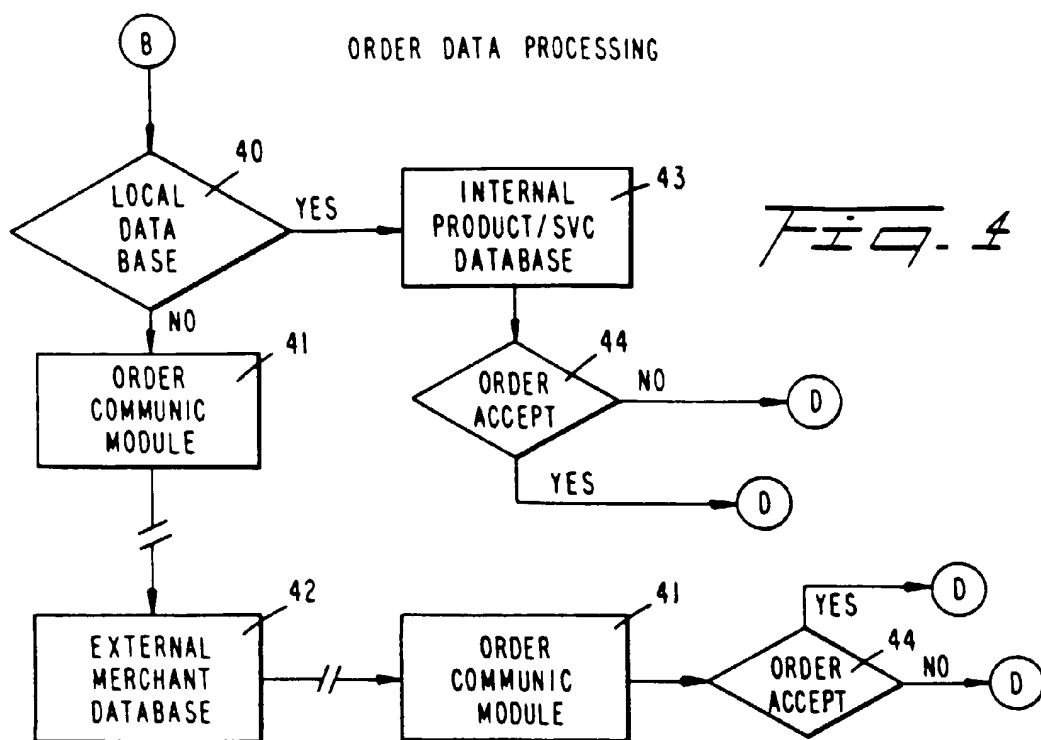
Fig. 2

OCT PROCESS



INCOMING ORDER PACKET PROCESSING

*Fig. 3*



CCS ORDER ACCEPTANCE PROCESS

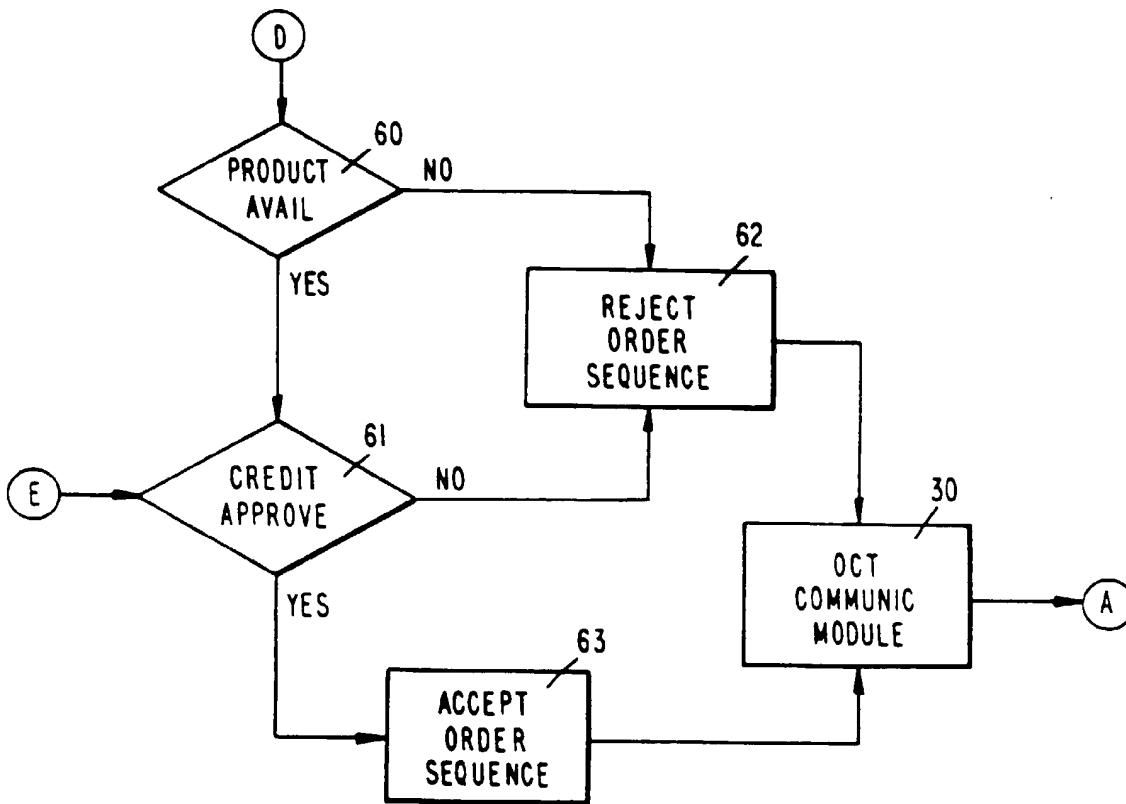


Fig. 6

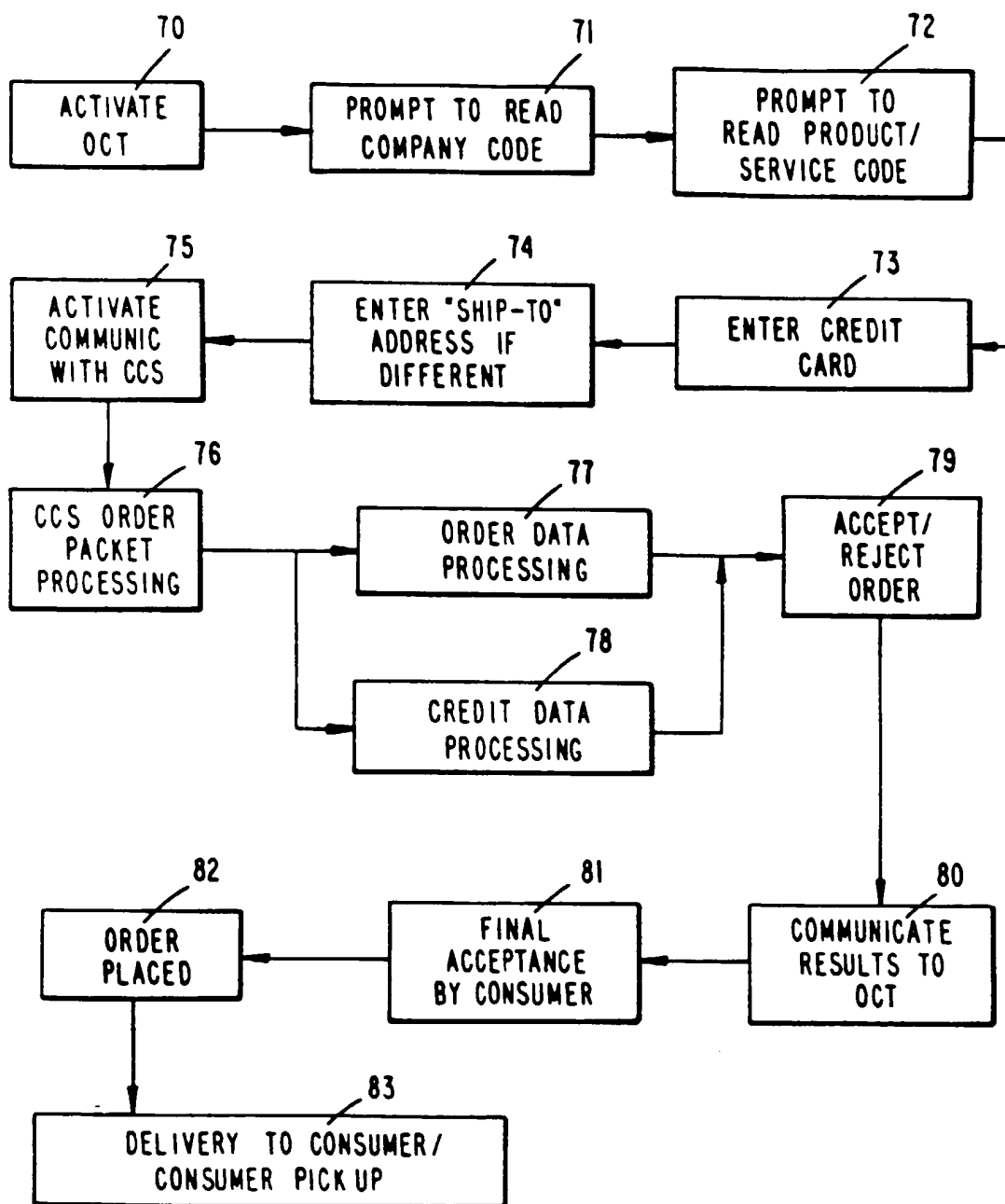
AUTOMATED ORDER AND
PAYMENT SYSTEM PROCESS
FLOW

Fig. 7